

SECTION 605 MANHOLES AND INLETS

605.1-DESCRIPTION:

This work shall consist of the construction of new and adjustment of existing manholes and inlets in accordance with these Specifications and in reasonably close conformity with the lines, grades, dimensions and locations shown on the Plans or established by the Engineer. Types of manholes and inlets shall be as shown on the Plans.

605.2-MATERIALS:

Cast-In-Place concrete and reinforcing steel for manholes and inlets shall meet the requirements of 601 (Class B) and 602 respectively. Precast concrete manholes shall conform to 715.19. Portland cement concrete for precast inlets shall meet the requirements in 715.19. Other requirements and details for precast inlets shall be as specified on the Plans.

Other materials shall meet the requirements specified in the following Subsections of Division 700:

MATERIAL	SUBSECTION
Clay or Shale Brick	715.16
Concrete Brick	715.17
Concrete Masonry Blocks	715.18
Joint Mortar	708.8
Gray Iron Castings	709.10
Manhole Steps	709.10, 715.19, 715.38
Pipe for Slot Inlets	713.2
Aggregate for Slot Inlets (Aggregate For Fabric Underdrain)	606.2
Fabric for Slot Inlets	715.11

Lean grout backfill, where specified on the Plans, shall consist of 3 bags of cement per cubic yard (167 kg of cement per m³) of material suitable to the Engineer.

Component materials shall be sampled, tested, and approved prior to the start of manufacture. Manholes and inlets shall be inspected at the manufacturing plant, if acceptable they shall be identified in accordance with MP 700.00.01.

All materials will be subject to inspection for acceptance as to condition at the latest practicable time the Engineer has the opportunity to check for compliance prior to or during incorporation of materials in the work.

Covers and frames for manholes and grates, frames, and grate support bars for inlets shall be gray iron castings except for Type G Inlets which require structural steel meeting 709.12.

605.3-CONSTRUCTION METHODS:

Concrete construction shall conform to the requirements for 601. Masonry shall conform to the requirements for the respective type. Exposed masonry surfaces shall be cured with wet burlap for a period of not less than 48 hours. Concrete surfaces shall be cured in accordance with 601.12.

Metal frames for inlets shall be set in a full mortar bed or cast into the concrete. Pipe sections shall be flush on the inside of the structure wall and project outside sufficiently for proper connection with the next pipe section.

Masonry shall fit neatly and tightly around the pipe. The flowline of the outlet pipe shall match the bottom elevation of the inlet or manhole. When the bell or groove of concrete pipe is placed in an inlet, the inside of the bell or groove shall be filled with concrete up to the flowline.

Bearing areas of frames, covers, and grates shall be so fitted and finished as to provide a firm, even seat for the entire cover or grate in the frame. No projections shall exist on the bearing areas of the castings; and the cover or grate shall seat in the frame without rocking.

Concrete inlets and manholes may be precast when shapes and dimensions conform to those shown on the Plans and when final installed top surfaces are flush with adjacent finish surfaces such as pavement, gutters, curbs, and sidewalks. Precast units shall include lifting hooks which will be out of sight after placement of the units and sufficient reinforcement to resist handling stresses.

Excavation and backfill shall be done in accordance with 212.

Weep holes shall be installed in the sidewalls of inlets during construction. These weep holes shall be constructed of non-rusting material, approximately 4 inches (100 mm) in diameter, located at or below subgrade elevation as directed or approved by the Engineer to properly drain subsurface material. Loose rock shall be placed around the outside of the structure at the openings or similar protective measures taken to prevent excessive backfill material from passing through the weep holes. The cost of weep hole installations shall be included in the unit price bid for the inlets. No deduction in concrete quantities shall be made for weep holes in the inlets.

When grade adjustment of existing structures is specified, the work shall be accomplished by one of the following methods:

- i. Carefully remove the existing frame; reconstruct the walls as necessary; clean and reset the existing frame in a full mortar bed at the required elevation.
- ii. Carefully remove the existing cover or grate and furnish and install an approved adjusting ring or casting.

605.4

Upon completion, each structure shall be cleaned of any accumulations of silt, debris, or foreign matter of any kind and shall be kept clear of such accumulation until final acceptance of the work.

605.4-METHOD OF MEASUREMENT:

Manholes and inlets, new or adjusted will be measured by the unit; slot inlets will be measured by the linear foot (m) in place.

605.5-BASIS OF PAYMENT:

The quantities, determined as provided above, will be paid for as provided below, which prices and payments shall be full compensation for furnishing the excavation, backfill, concrete, aggregate, reinforcing steel, fabric, grates, covers, frames, hardware, and other materials shown on the Plans and for doing all the work, including all labor, tools, equipment, supplies and incidentals necessary to complete the work.

When changes in Plans during construction require increases of depth in excess of 1 ft. (300 mm), the equitable price adjustment will be equal to the bid amount increased by a factor of the constructed depth less 1 ft. (300 mm) divided by the Plan depth.

When grade and drain contracts are bid separately from paving contracts, the structure may be designated to be partially built by the grade and drain Contractor and later completed by the paving Contractor.

605.6-PAY ITEMS:

ITEM	DESCRIPTION	UNIT
605001-*	TYPE A MANHOLE	EACH
605002-*	TYPE B MANHOLE	EACH
605003-*	TYPE A INLET	EACH
605004-*	TYPE B INLET	EACH
605005-*	TYPE C INLET	EACH
605006-*	TYPE D INLET	EACH
605007-*	TYPE E INLET	EACH
605008-*	TYPE F INLET	EACH
605009-*	TYPE G INLET	EACH
605010-*	TYPE H INLET	EACH
605011-*	TYPE J INLET	EACH
605012-*	ADJUSTING INLET TYPE, "type"	EACH
605013-*	ADJUSTING JUNCTION BOX	EACH
605015-*	ADJUSTING MANHOLE TYPE, "type"	EACH
605039-*	JUNCTION BOX	EACH
605040-*	"size" PERFORATED SLOT INLET RISER	EACH
605041-*	"size" SLOT INLET RISER	LINEAR FOOT (METER)
605050-*	ADJUST CONCRETE HEADWALL	EACH
605051-*	TYPE U INLET	EACH

* Sequence Number